Homework 3

The source code for this assignment must be submitted electronically using the Canvas course website prior to the start of class on Monday, October 15.

1. Write a Java application called `Poker` which uses the `Card` (Fig. 7.9) and `DeckOfCards` (Fig. 7.10) classes to create a deck of cards, shuffle the deck, and deal a five-card poker hand. Add the methods `getFace` and `getSuit` to the `Card` class.

2. Write a class called `Hand` which encapsulates the attributes and operations of a five-card poker hand including methods to `show` the contents of the hand and determine whether the `result` of the hand is a

   (a) royal flush

   (b) straight flush

   (c) four of a kind

   (d) full house

   (e) flush

   (f) straight

   (g) three of a kind

   (h) two pair

   (i) pair

   (j) nothing

3. Modify the `Poker` application to deal 2,598,960 consecutive poker hands, keep a `count` of each of the ten possible results, and print a summary table of the results. The expected frequency of each result is shown in the table below.

Result	Expected Frequency
Royal Flush	4
Straight Flush	36
Four of a Kind	624
Full House	3,744
Flush	5,108
Straight	10,200
Three of a Kind	54,912
Two Pair	123,552
Pair	1,098,240
Nothing	1,302,540